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Lyme Disease

LYME DISEASE, which is caused by a tick bite, initially presents with erythema chronicum migrans, fever and arthralgias. The rash spreads out from the bite, forming a raised border as it clears in the middle. Neurologic signs may develop later that can mimic viral meningitis or Bell's palsy and cardiac problems including myocarditis. The disease was first described by Steere in Lyme, Connecticut. In the West, the deer tick *Ixodes pacificus* transmits the disease. A history of an outing to a wooded area is common. The causative organism disseminated by the tick is the spirochete *Borrelia burgdorferi*.

The diagnosis can be confirmed by identifying antibodies to the *Borrelia* organism with either an immunofluorescence test or an enzyme-linked immunosorbent assay (ELISA). The fluorescent treponemal antibody absorption test may be positive in these patients. False-positive results, particularly with immunofluorescent testing, may be caused by other *Borrelia* spirochete infections, syphilis or possibly connective tissue disease. Apparent differences reported between immunofluorescent and ELISA testing for the *Borrelia* antibody is a major problem impeding advances in this area.

Antibiotic treatment with tetracycline or penicillin is usually curative for diseases caused by *B burgdorferi*.

Acrodermatitis chronica atrophicans, a cutaneous disease with both sclerotic and atrophic features, is also caused by *B burgdorferi*.

Other dermatologic diseases in which *B burgdorferi* has been suggested as a cause include localized scleroderma, lichen sclerosus et atrophicus and lymphadenosis benigna cutis. Preliminary serologic studies and possible identification of the organisms in affected tissues have been reported in these conditions but need further clarification.

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Ketoconazole Use in Tinea Versicolor

IN TWO STUDIES involving 62 patients, the use of ketoconazole, 400 mg in a single dose, was effective in clearing tinea versicolor, both clinically and mycologically, in 60 of the patients treated. The drug should be taken with breakfast, preferably with fruit juice. Because ketoconazole is rapidly excreted in sweat, patients should not bathe for 12 hours after taking the drug. If a patient is also taking cimetidine or β-blocker drugs, these must be withheld until two hours after taking the ketoconazole. If a patient is achlorhydric, the drug can be taken with lemon juice or a pharmacist can mix the two tablets (equivalent to 400 mg of ketoconazole) with an 8-ml aqueous solution of 0.2N hydrochloric acid. Caution the patient to take the mixture through a straw and immediately drink water to prevent damage to the teeth. Liver function tests are not indicated as hepatotoxicity is rare (1/15,000) and has never been reported in short-term therapy. Patients treated with this regimen have not noted any side effects. Residual hypopigmentation from the fungus may persist, however, until the patient is exposed to ultraviolet light.

Ketoconazole may enhance the anticoagulant effect of coumarin-like drugs. The use of ketoconazole with rifampin, isoniazid, phenytoin and hypoglycemic agents is not recommended, nor should ketoconazole be given to pregnant or nursing women who have tinea versicolor.

Preliminary studies indicate that recurrences are less frequent than those following topical therapy. Patients prefer the ketoconazole regimen, if the disease recurs, rather than other forms of treatment.

In summary, a single 400-mg dose of ketoconazole will clear tinea versicolor, provided that the patient complies with the regimen.

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Recent Advances in Clinical Use of Retinoids

VITAMIN A WAS FIRST USED about 40 years ago as therapy for various skin diseases and is a well-known regulator of epithelial growth and differentiation. Retinol taken in high oral dosages can cause significant toxicity problems, such as fatigue, headaches, cheilitis, anorexia, peeling of the skin, pseudotumor cerebri, papillary edema, hepatotoxicity, skeletal hyperostosis and lipid abnormalities. Because of this toxicity the use of vitamin A declined, but in the 1970s several vitamin A analogs were investigated as treatment of diseases such as acne, psoriasis, ichthyosis and other disorders of cornification. The beneficial effects of the use of 13-*cis*-retinoic acid for the treatment of lamellar ichthyosis were described in 1976 and shortly thereafter in patients suffering from severe nodular cystic acne. In subsequent studies, 13-*cis*-retinoic acid was found to be of value in generalized pustular psoriasis but was much less effective for other forms of psoriasis vulgaris. Etretinate was reported to have significant effects as therapy for severe forms of psoriasis vulgaris and was approved by the Food and Drug Administration in late 1986 as a treatment of severe recalcitrant psoriasis, exfoliative erythrodermic psoriasis and generalized pustular psoriasis. Its optimal use in severe plaque psoriasis is in combination with other forms of therapy, such as psoralen and high-intensity ultraviolet A phototherapy. Etretinate and 13-*cis*-retinoic acid have all the side effects listed above with retinol.

One additional problem of toxicity with etretinate is that it continues to be excreted for a long period after the drug therapy has been stopped. In women of child-bearing age, therefore, this drug should not be used, as the risks of teratogenicity may still be present for as long as two years or more after its use has been discontinued.

Clinical studies are currently being undertaken with the carboxylic acid derivative of etretinate, which will be known in the United States as acitretin. This drug has the efficacy and toxicity of etretinate but is much more rapidly excreted and therefore could be given to women of child-bearing age pro-